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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			WANG, QUAN ZHEN	
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			DATE MAILED: 07/13/200	6

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)				
Office Assistant Communication	10/049,613	KATAYAMA, MASATOSHI				
Office Action Summary	Examiner	Art Unit				
	Quan-Zhen Wang	2613				
The MAILING DATE of this communication app Period for Reply	ears on the cover sheet with the c	orrespondence address				
A SHORTENED STATUTORY PERIOD FOR REPLY WHICHEVER IS LONGER, FROM THE MAILING DA  - Extensions of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication.  - If NO period for reply is specified above, the maximum statutory period w  - Failure to reply within the set or extended period for reply will, by statute, Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 36(a). In no event, however, may a reply be tim vill apply and will expire SIX (6) MONTHS from to cause the application to become ABANDONED	l. ely filed the mailing date of this communication. O (35 U.S.C. § 133).				
Status						
1) Responsive to communication(s) filed on 5/16/	06 and 4/18/06.					
2a) ☐ This action is <b>FINAL</b> . 2b) ☑ This						
3) Since this application is in condition for allowar	Since this application is in condition for allowance except for formal matters, prosecution as to the merits is					
closed in accordance with the practice under E	x parte Quayle, 1935 C.D. 11, 45	3 O.G. 213.				
Disposition of Claims						
4)⊠ Claim(s) <u>1-9</u> is/are pending in the application.						
4a) Of the above claim(s) is/are withdraw	vn from consideration.					
5) Claim(s) is/are allowed.						
6)⊠ Claim(s) <u>1-9</u> is/are rejected.						
· _ · · · · · · · · · · · · · · · · · ·	7) Claim(s) is/are objected to.					
8) Claim(s) are subject to restriction and/or	r election requirement.					
Application Papers						
9)☐ The specification is objected to by the Examine	r.					
10)⊠ The drawing(s) filed on <u>21 February 2002</u> is/are: a) accepted or b)⊠ objected to by the Examiner.						
Applicant may not request that any objection to the	*	* *				
Replacement drawing sheet(s) including the correcti		• •				
11) ☐ The oath or declaration is objected to by the Ex	aminer. Note the attached Office	Action or form PTO-152.				
Priority under 35 U.S.C. § 119						
12)⊠ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a)⊠ All b)□ Some * c)□ None of:						
· · · · · · · · · · · · · · · · · · ·						
2. Certified copies of the priority documents have been received in Application No						
3. Copies of the certified copies of the prior	•	d in this National Stage				
application from the International Bureau	, , , , , , , , , , , , , , , , , , , ,	<b></b>				
* See the attached detailed Office action for a list	or the certified copies not receive	a.				
Attachment(s)						
1) Notice of References Cited (PTO-892)	4) Interview Summary	(PTO-413)				
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Da	ite				
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  Paper No(s)/Mail Date	5) Notice of Informal P. 6) Other:	atent Application (PTO-152)				

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#### **DETAILED ACTION**

### Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed on May 16, 2006 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 18, 2006 has been entered.

## Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- 3. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Admitted Prior Art (APA) fig. 1.

Regarding claim 1, The APA fig. 1 discloses a data transmission system including subscriber units (fig. 1, elements 105a and 105b), the subscriber unit comprising a wavelength division multiplexer/demultiplexer (fig. 1, combination of WDM

131b and terminator 135b in the subscriber 105b) configured to eliminate a particular wavelength signal (fig 1, the wavelength terminated) such that the wavelength division multiplexer/demultiplexer outputs wavelength signals other than the eliminated particular wavelength and prevents further downstream transmission of the eliminated particular wavelength.

4. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Wright et al. (U.S. Patent US 6,411,410 B1).

Regarding claim 1, Wright discloses a data transmission system (figs. 2 and 7) including subscriber units (fig. 2, ONU), the subscriber unit comprising a wavelength division multiplexer/demultiplexer (fig. 7, element 42) configured to eliminate a particular wavelength signal such that the wavelength division multiplexer/demultiplexer outputs wavelength signals other than the eliminated particular wavelength and prevents further downstream transmission of the eliminated particular wavelength (column 9, line 53 to column 10, line 14).

## Claim Rejections - 35 USC § 103

- 5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) fig. 1 in view of Kunikane et al. (U.S. Patent US 5,479,547).

Regarding claim 2, The APA has been discussed above in regard with claim 1.

APA differs from the claimed invention in that Wright does not specifically disclose that the multiplexer/demultiplexer is configured to reflect the particular wavelength signal to reject its input. However, it is well known in the art to configure a multiplexer/demultiplexer to reflect a particular wavelength signal to reject its input. For example, Kunikane discloses a multiplexer/demultiplexer to reflect a particular wavelength signal to reject its input (fig. 2). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a multiplexer/demultiplexer which reflects a particular wavelength signal to reject its input, such as the one taught by Kurata, in the system of APA in order to prevent the wavelength from further propagating along the original propagating direction.

Regarding claim 3, Kunikane further teaches that the multiplexer/demultiplexer comprises a reflecting layer (fig. 3, reflecting layer 26) at an input end surface of an optical fiber of the subscriber unit.

Regarding claim 4, Kunikane further teaches that the reflecting layer comprises a dielectric multilayer filter (column 2, lines 49-50; and column 4, lines 47-48).

7. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al. (U.S. Patent US 6,411,410 B1) in view of Kunikane et al. (U.S. Patent US 5,479,547).

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Regarding claim 2, Wright has been discussed above in regard with claim 1.

Wright differs from the claimed invention in that Wright does not specifically disclose that the multiplexer/demultiplexer is configured to reflect the particular wavelength signal to reject its input. However, it is well known in the art to configure a multiplexer/demultiplexer to reflect a particular wavelength signal to reject its input. For example, Kunikane discloses a multiplexer/demultiplexer to reflect a particular wavelength signal to reject its input (fig. 2). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a multiplexer/demultiplexer which reflects a particular wavelength signal to reject its input, such as the one taught by Kurata, in the system of Wright in order to prevent the wavelength from further propagating along the original propagating direction.

Regarding claim 3, Kunikane further teaches that the multiplexer/demultiplexer comprises a reflecting layer (fig. 3, reflecting layer 26) at an input end surface of an optical fiber of the subscriber unit.

Regarding claim 4, Kunikane further teaches that the reflecting layer comprises a dielectric multilayer filter (column 2, lines 49-50; and column 4, lines 47-48).

8. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al. (U.S. Patent US 6,411,410 B1) in view of Rivoallan (U.S. Patent US 6,130,974).

Regarding claim 5, Wright differs from the claimed invention in that Wright does not specifically disclose that the system comprising an optical fiber with a core and a cladding that covers an external surface of the core, and that has multiple notched

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formed on the cladding to reflect the particular wavelength signal. However, it is well known in the art that an optical fiber with a core and a cladding that covers an external surface of the core, and that has multiple notched formed on the cladding to reflect the particular wavelength signal. For example, Rivoallan discloses an optical fiber (fig. 1) having a core (fig. 1, core 12) and a cladding (fig. 1, cladding 12) that covers the external surface of the core, and that has multiple notched formed on the cladding (fig. 1, Dmax and Dmin) to reflect a particular wavelength signal. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a multi-notched optical fiber, such as the one taught by Rivoallan, in the system of Wright in order to improve the efficiency to cut off a wavelength in addition to reflection by diffracting it away during transmission along the fiber.

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9. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) fig. 1 in view of Rivoallan (U.S. Patent US 6,130,974).

Regarding claim 5, the APA differs from the claimed invention in that APA does not specifically disclose that the system comprising an optical fiber with a core and a cladding that covers an external surface of the core, and that has multiple notched formed on the cladding to reflect the particular wavelength signal. However, it is well known in the art that an optical fiber with a core and a cladding that covers an external surface of the core, and that has multiple notched formed on the cladding to reflect the particular wavelength signal. For example, Rivoallan discloses an optical fiber (fig. 1) having a core (fig. 1, core 12) and a cladding (fig. 1, cladding 12) that covers the

external surface of the core, and that has multiple notched formed on the cladding (fig. 1, Dmax and Dmin) to reflect a particular wavelength signal. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a multi-notched optical fiber, such as the one taught by Rivoallan, in the

system of APA in order to improve the efficiency to cut off a wavelength in addition to

reflection by diffracting it away during transmission along the fiber.

10. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al. (U.S. Patent US 6,411,410 B1) in view of Kunikane et al. (U.S. Patent US 5,479,547) and further in view of Ellison et al. (U.S. Patent US 6,556,757).

Regarding claim 6, Wright and Kunikane have been discussed above in regard with claim 2. The modified system of Wright and Kunikane differs from the claimed invention in that Kunikane does not specifically disclose that the wavelength division multiplexer/demultiplexer comprises an optical waveguide that is made of a polymer and absorbs a signal with a wavelength of 1650 nm, which is employed as the particular wavelength signal. However, Ellison et al. from the same field of endeavor teach an optical fiber made of a polymer (Column 2, line 26) and absorbs a signal with a wavelength of 1650 nm, which is employed as the particular wavelength (absorption about a dB per meter at 1650nm, Fig.7). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a fiber, such as the one disclosed by Ellison, for the fiber in the subscriber transmission system of Wright and Kunikane to obtain a further effective attenuation of a wavelength by

absorbing it when it propagates in the core and polymeric cladding layers of the fiber in addition to diffracting and reflecting it.

11. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) fig. 1 in view of Kunikane et al. (U.S. Patent US 5,479,547) and further in view of Ellison et al. (U.S. Patent US 6,556,757).

Regarding claim 6, APA and Kunikane have been discussed above in regard with claim 2. The modified system of APA and Kunikane differs from the claimed invention in that Kunikane does not specifically disclose that the wavelength division multiplexer/demultiplexer comprises an optical waveguide that is made of a polymer and absorbs a signal with a wavelength of 1650 nm, which is employed as the particular wavelength signal. However, Ellison et al. from the same field of endeavor teach an optical fiber made of a polymer (Column 2, line 26) and absorbs a signal with a wavelength of 1650 nm, which is employed as the particular wavelength (absorption about a dB per meter at 1650nm, Fig.7). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a fiber, such as the one disclosed by Ellison, for the fiber in the subscriber transmission system of APA and Kunikane to obtain a further effective attenuation of a wavelength by absorbing it when it propagates in the core and polymeric cladding layers of the fiber in addition to diffracting and reflecting it.

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12. Claims 7 and 8 are rejected under U.S.C. 103(a) as being unpatentable over Kunikane et al. (US Patent No: 5,479,547) in view of Wright et al. (U.S. Patent US 6,411,410 B1) and further in view of Feldman et al. (US Patent No: 6,577,414).

Regarding claim 7, Kunikane discloses a data transmission system (fig.15) including subscriber units (fig.15, unit 5 in home 2) configured to interconnect with and a central office unit (fig.15, combination of office 1 and distributor S) via optical fibers (fig.15, the fiber between S and subscriber unit 5), the central office unit is configured to multiplex a video signal (fig.15, video signal input to the central office 1; column 1, lines 50-51) with signals other than the video signal (column 1, line 45) to deliver them to the subscriber units (fig. 15, subscriber units 5 in home 2), wherein each subscriber unit is configured to demultiplex (fig. 15, WDM in subscriber units 5) a received signal; the subscriber units comprising a wavelength division multiplexer/demultiplexer (fig. 15, WDM in the subscriber units 5) configured to eliminate a particular wavelength signal (fig. 15,  $\lambda$ 2) from the subscriber unit (fig. 15, subscriber unit 5); the central office unit comprises an optical distributor (fig. 15, S) configured to distribute the video signal and supplying it to a wavelength division multiplexer/demultiplexer. The communication system of Kunikane differs from the claimed invention in that Kunikane does not specifically disclose that the division multiplexer/demultiplexer is configured to prevent the eliminated particular wavelength from further downstream transmission of the eliminated particular wavelength. However, it is well known in the art that a division multiplexer/demultiplexer can be configured to eliminate a particular wavelength signal such that the wavelength division multiplexer/demultiplexer outputs wavelength signals

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other than the eliminated particular wavelength and prevents further downstream transmission of the eliminated particular wavelength. For example, Wright discloses a communication system comprising a division multiplexer/demultiplexer (fig. 7, element 42) configured to eliminate a particular wavelength signal such that the wavelength division multiplexer/demultiplexer outputs wavelength signals other than the eliminated particular wavelength and prevents further downstream transmission of the eliminated particular wavelength. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a division multiplexer/demultiplexer, such as the one taught by Wright, and configure the multiplexer/demultiplexer to eliminate a particular wavelength signal such that the wavelength division multiplexer/demultiplexer outputs wavelength signals other than the eliminated particular wavelength and prevents further downstream transmission of the eliminated particular wavelength in the system of Kunikane in order to output a predetermined signals for a particular customer. The modified communication system of Kunikane and Wight further differs from the claimed invention in that Kunikane and Wight do not specifically disclose that an optical amplifier is configured to amplify the video signal to be transmitted. However, an optical amplifier is well known in the art. For example, Feldman teaches using an optical amplifier (fig. 1, amplifiers 114 and 128) for amplifying the video signal to be transmitted. Therefore it would have been obvious to a person having ordinary skill in the art at the time of the invention to incorporate an optical amplifier, such as the one disclosed by Feldman, in the central office of the

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transmission system of Kunikane in order to increase the signal strength to further increase the transmission distance.

Regarding claim 8, Kunikane teaches a data transmission system (fig. 15) including subscriber units (fig. 15, subscriber unit 5 in home 2) configured to interconnect with and a central office unit (fig. 15, combination office 1 and distributor S) via optical fibers (fig.15, the fiber between S and subscriber unit 5), the central office unit is configured to multiplex a video signal (fig.15, video signal input to the central office 1; column 1, lines 50-51) with signals other than the video signal (column 1, line 45) to deliver them to the subscriber units (fig. 15, subscriber units 5 in home 2), wherein each subscriber unit is configured to demultiplex (fig. 15, WDM in subscriber units 5) a received signal; the subscriber units comprising a wavelength division multiplexer/demultiplexer (fig. 15, WDM in the subscriber units 5) configured to eliminate a particular wavelength signal (fig. 15,  $\lambda$ 2) from the subscriber unit (fig. 15, subscriber unit 5); an optical distributor (fig. 15, S) configured to distribute the video signal and supplying it to a wavelength division multiplexer/demultiplexer. The communication system of Kunikane differs from the claimed invention in that Kunikane does not specifically disclose that the division multiplexer/demultiplexer is configured to prevent the eliminated particular wavelength from further downstream transmission of the eliminated particular wavelength. However, it is well known in the art that a division multiplexer/demultiplexer can be configured to eliminate a particular wavelength signal such that the wavelength division multiplexer/demultiplexer outputs wavelength signals other than the eliminated particular wavelength and prevents further downstream

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transmission of the eliminated particular wavelength. For example, Wright discloses a communication system comprising a division multiplexer/demultiplexer (fig. 7, element 42) configured to eliminate a particular wavelength signal such that the wavelength division multiplexer/demultiplexer outputs wavelength signals other than the eliminated particular wavelength and prevents further downstream transmission of the eliminated particular wavelength. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a division multiplexer/demultiplexer, such as the one taught by Wright, and configure the multiplexer/demultiplexer to eliminate a particular wavelength signal such that the wavelength division multiplexer/demultiplexer outputs wavelength signals other than the eliminated particular wavelength and prevents further downstream transmission of the eliminated particular wavelength in the system of Kunikane in order to output a predetermined signals for a particular customer. The modified communication system of Kunikane and Wight further differs from the claimed invention in that Kunikane and Wight do not specifically teach that the central office unit comprises a plurality of video signal generators configured to generate video signals with different wavelengths; a first wavelength division multiplexer/demultiplexer configured to multiplex the generated video signals; and an optical amplifier is configured to amplify the video signal to be transmitted and a plurality of video signal generators. However, Feldman teaches a central office unit that comprises a plurality of video signal generators for generating video signals with different wavelengths (fig. 5,  $\lambda 1$  to  $\lambda n$ ; column 2, lines 65-67 and column 3, lines 1-22); a first wavelength division multiplexer/demultiplexer (fig. 5, \(\lambda\)

MUX) for multiplexing the video signals supplied from said plurality of video signal generators; an optical amplifier (fig. 1, amplifier 128 and fig. 4, amplifier 437) for amplifying the video signal to be transmitted in a subscriber fiber-to-the-home CATV broadcast system (fig. 1, element 180). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate an optical amplifier, a plurality of video signal sources with different wavelengths and two wavelength division multiplexer/demultiplexers, such as those taught by Feldman, in the central office unit of the communication system of Kunikane in order to transmit video signals obtained from video signal sources with different wavelengths together with signal other than video signals to subscribers.

13. Claim 9 is rejected under U.S.C. 103(a) as being unpatentable over Kunikane et al. (US Patent No: 5,479,547) in view of Wright et al. (U.S. Patent US 6,411,410 B1) and further in view of Schmack et al. (US Patent No: 4,481,621).

Regarding claim 9, Kunikane discloses a data transmission system (fig.15) including subscriber units (fig.15, unit 5 in home 2) configured to interconnect with and a central office unit (fig.15, combination of office 1 and distributor S) via optical fibers (fig.15, the fiber between S and subscriber unit 5), the central office unit is configured to multiplex a video signal (fig.15, video signal input to the central office 1; column 1, lines 50-51) with signals other than the video signal (column 1, line 45) to deliver them to the subscriber units (fig. 15, subscriber units 5 in home 2), wherein each subscriber unit is configured to demultiplex (fig. 15, WDM in subscriber units 5) a received signal; the

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subscriber units comprising a second wavelength division multiplexer/demultiplexer (fig. 15, WDM in the subscriber units 5) configured to eliminate a particular wavelength signal (fig. 15,  $\lambda$ 2) from the subscriber unit (fig. 15, subscriber unit 5). The communication system of Kunikane differs from the claimed invention in that Kunikane does not specifically disclose that the division multiplexer/demultiplexer is configured to prevent the eliminated particular wavelength from further downstream transmission of the eliminated particular wavelength. However, it is well known in the art that a division multiplexer/demultiplexer can be configured to eliminate a particular wavelength signal such that the wavelength division multiplexer/demultiplexer outputs wavelength signals other than the eliminated particular wavelength and prevents further downstream transmission of the eliminated particular wavelength. For example, Wright discloses a communication system comprising a division multiplexer/demultiplexer (fig. 7, element 42) configured to eliminate a particular wavelength signal such that the wavelength division multiplexer/demultiplexer outputs wavelength signals other than the eliminated particular wavelength and prevents further downstream transmission of the eliminated particular wavelength. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a division multiplexer/demultiplexer, such as the one taught by Wright, and configure the multiplexer/demultiplexer to eliminate a particular wavelength signal such that the wavelength division multiplexer/demultiplexer outputs wavelength signals other than the eliminated particular wavelength and prevents further downstream transmission of the eliminated particular wavelength in the system of Kunikane in order to output a

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predetermined signals for a particular customer. The modified communication system of Kunikane and Wight further differs from the claimed invention in that Kunikane and Wight do not specifically teach that the subscriber unit comprises a first wavelength division multiplexer/demultiplexer configured to demultiplex the video signals and signals other than video signal. However, Schmack et al. from the same field of endeavor teach a subscriber unit (fig. 2) comprises of a wavelength division multiplexer/demultiplexer (fig. 2, BB-DMUX) for demultiplexing the video signals and signals other than video signal (fig. 2, BB-DMUX, TV, ST, SB; column 2, lines 60-67 and column 3, lines 1-3). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a to multiplexer/demultiplexers, such as the one taught by Schmack, in the communication system of Kunikane et al. in order for the received signals to be demultiplexed in the first multiplexer/demultiplexers into the original video signals and signals other than video signal before being sent to the second wavelength division multiplexer/demultiplexer of Kunikane in order to reduce crosstalk interference happening in between video signals and signals other than video signal.

# Response to Arguments

14. Applicant's arguments file on April 18, 2006 have been considered but are moot in view of the new ground(s) of rejection.

## Conclusion

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15. The prior art made of record and not relied upon is considered pertinent to

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applicant's disclosure. Albanese at al. (U.S. Patent US 4,712,859) discloses a

multiplexer/demultiplexer unit with an absorber.

16. Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Quan-Zhen Wang whose telephone number is (571)

272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday -

Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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Business Center (EBC) at 866-217-9197 (toll-free).

qzw 1/16/2006

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